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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/500,399 | 06/20/2005 | Tsuyoshi Kashima | 885A.0003.U1(US) | 4399 |
| 29683 7590 01/06/2009 HARRINGTON & SMITH, PC 4 RESEARCH DRIVE, Suite 202 SHELTON, CT 06484-6212 | | | EXAMINER CASCA, FRED A | |
| | | | ART UNIT 2617 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/500,399 | Applicant(s) KASHIMA, TSUYOSHI | |
| | Examiner FRED A. CASCA | Art Unit 2617 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to applicant's amendment filed on October 3, 2008. Claims 1-29 are still pending in the present application. **This Action is made FINAL.**

Response to Arguments

2. Applicant's arguments with respect to claims 1-29 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement, has been considered, but they are not persuasive.

In response to arguments that limitation "the distance being a function of the ratio such that the larger the ratio the larger the distance," is explained by equation (1) on page 8, the examiner respectfully disagrees. The equation and descriptions of page 8 of the specification describe a *ratio between two areas* such that when the ratio is large the distance is large as well. However, the limitations of independent claims 1, 3, 13, 22 and 24 refer to *a ratio between a number of nodes present in two different areas*. Thus, the explanations on page 8 of the specification are not sufficient to make a person of ordinary skill in the art understand how the distance is based on the ratio of numbers nodes in different regions. It is not clear how the distance is estimated based on the numbers of nodes in different regions. Without additional guidance, there would be undue experimentation as to how to estimate the distance based solely on the ratio of the number of nodes in different region.

Applicant's arguments with respect to the rejection claims under 35 USC 103(a) have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Independent claims 1, 3, 13, 22 and 24 recite the limitation, “estimating a distance between the mobile node and the each specified candidate node on the basis of the ratio, the distance being a function of the ratio such that the larger the ratio the larger the distance.” There is insufficient explanation of how to estimate a distance between a mobile node and non-mobile node based on a ratio of two sets of node in different regions. Figures 1-3 of the specification has figures of the regions where the nodes would be. However, the explanations of these figures with reference to estimating the distance are not sufficient to make a person of ordinary skill in the art understand how the distance based on the ratio of numbers nodes in different regions obtained. It is not clear how the distance is estimated based on the numbers of nodes in different regions. Without additional guidance, there would be undue experimentation as to how to estimate the distance based solely on the ratio of the number of nodes in different region.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4, 8-14, 18-25 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chheda et al (US 5,946,621) in view of Petty et al (US 6,308,073 B1).

Referring to claim 1, Chheda discloses a method (abstract) specifying, as a candidate node, a node present within a communication zone of a mobile node (col. 1, lines 45-65, col. 2, lines 14-24, “determining the point at which a sector can communicate acceptably with the mobile unit”); calculating, for each specified candidate node, the number of nodes present within a first region where the communication zone of the mobile node and a communication zone of the candidate node overlap each other (Figures 2-4, col. 9, lines 14-60, “combine individual neighbor sets”, “B=number combined rank of neighbor X”, “neighbors that are also candidate or active set members”),

and the number of nodes present within a second region defined by the communication zone of the candidate node which does not overlap the communication zone of the mobile node (Figure 1, “base station”, “B1”), and estimating distance between nodes (Figures 1-2, and col. 1, lines 22-65, note that estimating distance is inherent in CDMA and other wireless networks especially during the handoff process).

Chheda fails specifically disclose estimating the distance in the format claimed by the applicant.

Petty discloses a system for locating a remote mobile station within an area of a wireless communication system by estimating mobile terminal distances relative neighbor base stations (col. 2, figures 1-3 and 5, and lines 30-57, “to calculate distances to the respective bases stations).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the method of Chheda by incorporating the teachings of Petty and consequently providing calculating distance based on the ratio as claimed by applicant, for the purpose of providing a more accurate distance estimation.

The above combination does not specifically disclose estimating a distance the mobile node in the format claimed.

Barany discloses that as cell sizes increase, potential distances between mobile units and the base station increase (col. 4, lines 30-45).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the above combination by incorporating the teachings of Barany such that a distance would be estimated in the format claimed, for the purpose of providing an efficient communication system.

Referring to claim 2, the combination of Chheda/Petty/Barany disclose the node selecting method according to claim 1, characterized in that the mobile node further executes a fourth step of selecting a node for next communication, on the basis of the estimated distance (Chheda, col. 1, lines 42-56, “handoff”).

Referring to claim 3, Chheda discloses a method (abstract and Figures 1-3), specifying a node present within a communication zone of a mobile node (col. 1, lines 45-65, col. 2, lines 14-24, “determining the point at which a sector can communicate acceptably with the mobile unit”); specifying a designated node out of neighbor nodes (figures 1-5 and col. 1, lines 42-56, “handoff”); specifying a next neighbor node present within a communication zone of the designated node (col. 1, lines 42-56, “handoff”);

counting a common node number as the number of nodes common to the neighbor node and the next neighbor node (Figures 2-4, col. 9, lines 14-60, “combine individual neighbor sets”, “B=number combined rank of neighbor X”, “neighbors that are also candidate or active set members”); counting a non-common node number resulting from a subtraction of the common node number from the total node number of the nodes of the neighbor node and the next neighbor node (figures 1, “base station”, “B1”), and

estimating a distance between the mobile node and the designated node (Figures 1-2, and col. 1, lines 22-65, note that estimating distance is inherent in CDMA and other wireless networks especially during the handoff process).

Chheda fails specifically disclose estimating the distance in the format claimed by the applicant.

Petty discloses a system for locating a remote mobile station within an area of a wireless communication system by estimating mobile terminal distances relative neighbor base stations (col. 2, figures 1-3 and 5, and lines 30-57, “to calculate distances to the respective bases stations).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the method of Chheda by incorporating the teachings of Petty and consequently providing calculating distance based on the ratio as claimed by applicant, for the purpose of providing a more accurate distance estimation.

The above combination does not specifically disclose estimating a distance the mobile node in the format claimed.

Barany discloses that as cell sizes increase, potential distances between mobile units and the base station increase (col. 4, lines 30-45).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the above combination by incorporating the teachings of Barany such that a distance would be estimated in the format claimed, for the purpose of providing an efficient communication system.

Referring to claim 4, the combinations of Chheda/Petty/Barany disclose the node selecting method according to claim 3, characterized in that the mobile node further executes a seventh step of selecting a node for next communication, on the basis of the estimated distance (Chheda, col. 1, lines 42-56, "handoff").

Referring to claim 8, the combinations of Chheda/Petty/Barany disclose the node selecting method according to claim 1, and further disclose characterized in that neighbor node lists are compared with each other in relation to all nodes present within each region; even a plurality of nodes are counted as one if the plurality of nodes have the same neighbor node list;

and the number thus counted is used as the modified number of nodes of the region (Figures 1-5 and col. 1, lines 20-65 and col. 2, lines 15-25).

Referring to claim 9, the combinations of Chheda/Petty/Barany disclose the node selecting method according to claim 1, and further disclose characterized in that the mobile node executes the first to third steps at predetermined periods (Figures 1-5 and col. 1, lines 20-65 and col. 2, lines 15-25, col. 9, lines 14-60).

Referring to claim 10, the combinations of Chheda/Petty/Barany disclose the node selecting method according to claim 3, characterized in that the mobile node executes the first to sixth steps at predetermined periods (Figures 1-5 and col. 1, lines 20-65 and col. 2, lines 15-25, col. 9, lines 14-60).

Referring to claim 11, the combinations of Chheda/Petty/Barany disclose the node selecting method according to claim 9, characterized in that the predetermined period is changed in accordance with a movement speed of the mobile node (Figures 1-5 and col. 1, lines 20-65 and col. 2, lines 15-25, col. 9, lines 14-60).

Referring to claim 12, the combinations of Chheda/Petty/Barany disclose the node selecting method according to claim 9, characterized in that the predetermined period is changed in accordance with an arrangement density of the plurality of nodes (Figures 1-5 and col. 1, lines 20-65 and col. 2, lines 15-25, col. 9, lines 14-60).

Referring to claims 13-14 and 18-21, claims 13-14 and 18-21 recite features analogous to the features of claims 1-2 and 8-11, thus the combination of Chheda/Petty/Barany disclose all elements of claims 13-14 and 18-21 (see the rejection of claims 1-2 and 8-11 above).

Referring to claims 22-23, claims 22-23 recite features analogous to the features of claims 1-2, thus the combination of Chheda/Petty/Barany disclose all elements of claims 22-23 (see the rejection of claims 1-2 above).

Referring to claims 24-25 and 29, claims 24-25 and 29 recite features analogous to the features of claims 1-2 and 8, thus the combination of Chheda/Petty/Barany disclose all elements of claims 24-25 and 29 (see the rejection of claims 1-2 and 8 above).

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred A. Casca whose telephone number is (571) 272-7918. The examiner can normally be reached on Monday through Friday from 9 to 5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Harper, can be reached at (571) 272-7605. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/VINCENT P. HARPER/

Supervisory Patent Examiner, Art Unit 2617